DOCUMENT RESUME

ED 242 664 SP 023 865

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TITLE	Applying Research to Teacher Education: Overview of Research Utilization in Elementary Teacher Education.
INSTITUTION	Far West Lab. for Educational Research and Development, San Francisco, Calif.
SPONS AGENCY	National Inst. of Education (ED), Washington, DC.
PUB DATE	Oct 83
CONTRACT	400-83-0003
NOTE	22p.; Paper presented at the Annual Meeting of the Northern Rocky Mountain Educational Research Association (Jackson Hole, WY, October 13-15, 1983).
PUB TYPE	Speeches/Conference Papers (150) -- Information Analyses (070) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Classroom Research; *Elementary School Teachers; Higher Education; Inservice Teacher Education; *Preservice Teacher Education; Program Effectiveness; Research and Development; *Research Projects; *Research Utilization; *Teacher Effectiveness
IDENTIFIERS	*Teacher Education Academies

ABSTRACT

The design and implementation of a two-year project on research utilization in elementary teacher education (RUETE) integrates: (1) the application of research on effective instruction; (2) the utilization of processes of adult learning in a systematic manner; and (3) the development of teacher education academies. The first of the study's two phases is designed to establish a Regional Teacher Education Team (RTET), incorporate recent research findings from elementary school effectiveness studies into the preservice elementary school teacher education process, and to inform the initiation of the teacher education academies. The second phase proposes to concentrate on more fully developing the academies, which are the cornerstone of both phases. These teacher education academies will: (1) understand the content of classroom effectiveness research; (2) engage in collaborative inquiry; (3) identify the present and future staffing criteria and staff development priorities of the cooperating school districts; (4) analyze classroom instruction; and (5) apply instructional research to classroom instructional problems. This paper briefly describes the effective instruction framework adapted for this project, selection of the three study sites (in Utah, Nevada, and California), collaborative interactive research and development process of adult learning, design of Phase 1, and projections for Phase 2. (CJB)

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Applying Research to Teacher Education:
Overview of Research Utilization in Elementary Teacher Education

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Paper presented at the annual meeting of the
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Jackson Hole, Wyoming
October 1983.

SP023865

This paper reports work carried out under Contract 400-83-003 from the National Institute of Education, Department of Education. The opinions expressed do not necessarily reflect the position or policy of the Institute and no official endorsement should be inferred.

Introduction

In December 1982 the National Institute of Education (NIE) funded the Far West Laboratory for Educational Research and Development (FWLERD) to conduct a study, Applying Research to Teacher Education (ARTE). The purpose of the ARTE program is to create vehicles for impact on knowledge, practice, and policy for student teachers, cooperating teachers, and teacher education faculty regarding current research on effective instruction and effective schools.

The ARTE program includes three major research projects: research utilization in elementary teacher education; conditions of secondary mathematics and science teacher education; and preservice training of middle/junior high school teachers. The research utilization in elementary education (RUETE) facet is the focus of this report. RUETE is premised on the assumption that we have a relatively substantial body of research on effective instruction, generated largely during the last 5 - 10 years, that might inform teacher education practice. The design and implementation of this two-year project integrates (a) the application of research on effective instruction, (b) the utilization of processes of adult learning in a systematic manner, and (c) the development of teacher education academies.

The study consists of two major phases: Phase I, from December 1982 to November 1983, and Phase II, from December 1983 to November 1984. The first phase is designed to establish a Regional Teacher Education Team (RTET), incorporate recent research findings from elementary school effectiveness studies into the preservice elementary school

teacher education process and to inform the initiation of the teacher education academies. The second phase proposes to concentrate on more fully developing the academies, which are the cornerstone of both phases. These teacher education academies will (a) understand the content of classroom effectiveness research, (b) engage in collaborative inquiry, (c) identify the present and future staffing criteria and staff development priorities of the cooperating school districts, (d) analyze classroom instruction, and (e) apply instructional research to classroom instructional problems.

The following sections of this paper briefly describes the effective instruction framework adapted for this project, selection of the three study sample sites, collaborative interactive research and development process of adult learning, design of Phase I, and projections for Phase II.

Effective Instruction Framework

The areas of concentration addressed for this project framework were determined by the regional teacher education team (RTET) of regional research fellows (RRF) representing the three participating study sites, in collaboration with FWLERD staff. The collaborative team agreed that:

> Effective instruction includes those teaching behaviors that result in intended positive changes in student attitudes and participation in instruction (e.g. engagement, accuracy, task completion, and obtaining feedback). Operationally defined in terms of this project, effective instruction includes teaching strategies that increase academic learning time (ALT), and variation in activity and task structure (e.g. grouping practices). (Gee, 1983)

Discussions of this definition of effective instruction in the light of existing research suggested that the team concentrate on

research on teaching behaviors that are tied to student achievement, and on activity and task structures. Interest in these areas led to the inclusion of research on academic learning time (ALT) as a measure of student achievement. All three research areas--teaching behaviors, activity structures, and academic learning time--will be briefly discussed here.

Within the range of studies considered, those involving teaching behaviors in the direct instruction model have made the biggest impact on the nature of inservice teacher training programs. The behaviors described as active teaching (Good, 1983) are characterized by teacher-directed learning and a high level of teacher-student interaction. They have taken on significance because they have produced greater student achievement, and thus are considered a form of effective instruction.

Teacher-dominated instruction, however, is not the only way to facilitate learning. The literature concerning the activity structure has suggested that the organization of instruction may influence student achievement as well as the social relationships within the classroom (Bossert, 1979). Researchers have examined, for example, the effects of grouping on the achievement of lower ability and higher ability students (Weinstein, 1976; Barr, 1975, 1980). Ongoing studies, however, are indicating that what occurs within a group may be more significant than the grouping itself. Tom Good recently emphasized this in a paper presented at the American Educational Research Association: "The <u>form</u> of organization structure alone has not, does not, and never will predict student outcomes". Research on the relationships among various activity structures and their implications for student achievement is limited and thus far inconclusive.

The third and last area of effective instruction research being used by the RUETE project is academic learning time (ALT), a measure of student learning that incorporates the time allocated to a learning tasks, the time a student is engaged in the task, and the accuracy of the student in performing the appropriate or relevant task (Fisher, et al. 1980). ALT has been shown to be more proximal to instruction than achievement scores and therefore offers a promising gauge of effective instruction for use in the research activities of the RUETE project.

Selection and Description of the Sample

FWLERD, in conjunction with the staffs of preservice elementary teacher education programs at three regional institutions of higher education, is applying some 10 years of research on teaching in elementary schools to build preservice teacher trainees' knowledge and skills in the areas of effective classroom instruction. Site selection involved three phases. First, a prespecified site selection factor was included in the original proposal to especially serve the designated FWLERD Regional Area. Second, within the FWLERD Regional Area teacher preparation program sites were selected utilizing objective criteria drawing from among characteristics associated with teacher preparation programs and their cooperating school districts. Third, teacher education faculty were selected by the nomination interview procedure within each site to serve on the Regional Teacher Education Team. These Regional Research Fellows are planning and implementing the application of research findings on effective schooling and effective schooling and effective instruction in their own

programs as well as establishing their own Teacher Education Academy.

The term "site" designates the geographical location of teacher preparation programs participating in conduct of the study. Each Regional Research Fellow, in turn, is collaborating with one or more school district(s) where preservice teachers are trained. Hence, a site refers to the Institution of Higher Education Teacher Preparatory Program and the general community or school district within which preservice teachers obtain supervised classroom experience and practice skills and knowledge for that program under the auspices of a particular teacher education program person.

The sites participating in Phase I of the study include:

- University of Utah, Salt Lake City (Amy Driscoll, Regional Research Fellow) in collaboration with Salt Lake City School District;
- University of Nevada, Reno (Kenneth Johns, Regional Research Fellow) in collaboration with the Washoe County School District;
- Mills College, Oakland, California (Richard Ponzio, Regional Research Fellow) in collaboration with the Vallejo Unified School District.

A number of interrelated factors of a purposive rather than a probability nature were considered in selecting sites. Outside of the prespecified area factor, study sites were selected based on factors including provisions for variety in teacher education program characteristics, school district characteristics, and nomination of the teacher education personnel. The following paragraphs examine each of these factors and discuss the aspects for selection of study sites and Regional Research Fellows.

Prespecified site selection factor. The original proposal specified that sites be selected within the FWLERD regional area states of

Nevada (except Las Vegas), Utah, and northern California. The selection process within the states of Nevada and Utah was relatively straight-forward as there is only one university within each area and state, respectively: the University of Nevada at Reno and the University of Utah at Salt Lake City. Each one of the large number of teacher education programs in northern California was carefully considered in terms of the selection factors. Characteristics of each of the sites surveyed are presented in Table 1.

Teacher education program characteristics. The first factor to be considered in site selection was representation of a variety of teacher education program characteristics. Variability among sites in terms of aspects such as program size, the structure of teacher education programs, and the funding source is described below.

Program size. Several aspects related to the size of the teacher education program were considered for site selection. Each site has a sufficient number of student teachers to allow a useful description of the application of research findings. The process of adult learning for a full program complement of student teachers may differ from that for only a part of the student teachers in a program. Therefore, both small and large teacher education programs are represented in our sample sites. Additionally, the number of full time employed faculty members varies among the selected sites.

Program structure. Another aspect in site selection was variety in the breakdown of the teacher education programs. Considerable controversy exists over the general division of the academic school year in terms of the continuity of learning. Therefore, both the semester and quarter systems are represented in the study sample.

Table 1. Characteristics of sites considered and selected

GEOGRAPHIC REPRESENTATION	Univ. of Utah	Univ. of Nevada	Hills, Oakland, CA	Ca. State, Stanislaus	Ca. State, Chico	Ca. State, Fresno	Ca. State, Hayward	Ca. State, Humboldt	Ca. State, Sacramento	Ca. State, S. F.	Ca. State, San Jose	Ca. State, Sonoma	U.C. Berkeley	U.C. Davis	U.C. Santa Cruz	Univ. of Pacific	Univ. of S.F.	College of Notre Dame	Dominican College	Holy Names College	St. Mary's College	Univ. of Santa Clara
Utah	X																					
Nevada		X																				
Northern California			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PROGRAM CHARACTERISTICS																						
Size - Student Teachers 4-20			X										X				X	X	X	X		X
21-60		X		X				X						X	X						X	
61-100+	X				X	X	X		X	X	X	X										
Size - Fulltime Faculty 1 - 5		X	X					X					X						X	X	X	X
6 - 10+	X						X		X	X	X	X		X		X						
Structure Program System semester		X	X								X	X				X	X	X		X		
quarter	X							X					X		X							X
Matriculation system undergraduate	X	X							X													
graduate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Student Teaching Exp.																						
minimal experience 10-18 weeks			X	X												X						
12-15 weeks	X	X							X		X			X	X							y
timing Fall		X	X						X		X	X					X					X
Winter		X	X						X													X
Spring	X	X	X						X		X	X		X			X					X
school dist. classrms. small, rural	X										X			X								
medium, suburban			X												X	X	X					X
large, urban	X	X							X			X				X						X
practicum block			X						X			X				X						
department	X	X									X			X	X		X					X
Public Funding	X	X		X	X	X	X	X	X	X	X	X	X	X								
SCHOOL DISTRICT CHARACTERISTICS																						
Size small, rural	X	X									X			X				X				
medium, suburban			X			X								X	X	X	X	X				X
large, urban	X	X	X						X			X					X	X				X
Pre- Inservice Collaboration Program	X	X	X		X		X		X	X												
Pupil Socio-economic Status variation	X	X	X				X			X		X	X		X							X
NOMINATION PROCESS																						
Program Nominated			X			X	X		X	X		X		X		X		X	X	X	X	X
Fellows Nominated	X	X	X				X			X			X				X		X			X

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Additionally, teacher education program matriculation during a fifth year of college and matriculation during the third or fourth year of a baccalaureate program are represented in the study sample.

The amount of student teaching experience, the timing of the student teaching experience, and the range of pupils' socio-economic status within the classrooms available for the student teaching assignment were aspects considered in selecting study sample sites. The range of the minimal student teaching experience varies from initial experiences of 10 weeks to 15 weeks. Classrooms available for student teaching assignments vary across small/rural, medium/suburban, and large/urban settings. Additionally, there is variety in the practicum course work associated with the student teaching experience. For example, both the "block" practicum and departmentalized course work are represented in the site selection.

Funding source. Large publically funded institutions of higher education generally maintain teacher education programs of a different nature than those of smaller privately funded institutions. In order for findings to be useful to a variety of different kinds of teacher education programs, the selected sites represent both private and publically supported institutions.

Cooperating school district characteristics. The third factor to be considered in site selection was representation of a variety of cooperating school district characteristics. Variability among sites in terms of aspects such as population size, collaboration between pre- and inservice teachers, and the socioeconomic status of pupils in the public school student teaching population are described below.

School district size. The differences in organizational structure of smaller and larger school districts influence the process of student teaching experience. Therefore the selection of sample sites considered the representation of a variety of cooperating school districts to insure a broad spectrum of interests and orientations. Selected teacher education programs cooperate with school districts in small/rural, medium/suburban, and large/urban localities.

Pre- and inservice program collaboration. Since this study considers all personnel who have contact with the pre- and inservice teacher as teacher educators and since one of the major levels of this study is the establishment of Teacher Education Academies which will include a variety of teacher educator role groups, an important aspect in selecting a site was the interest and potential for collaboration and communication among a variety of role groups. Therefore, each of the selected sites maintains a unique relationship with local school districts. For example, the University of Utah has established and maintained Professional Development Centers within public schools where staff serve joint appointments with the University and the school district. It is within these Professional Development Centers that student teaching experiences, inservice with cooperating teachers, and special research and development projects occur. The University of Nevada collaborates with a year-round public school and Mills College maintains a graduate program within which many of the public school cooperating teachers are enrolled.

Student socioeconomic status. Since it is relatively well established that differences in the socioeconomic status of students in public school classrooms provide different kinds of teaching and

learning experiences, this element was considered in selecting study sites. Generally, the provision for a range of low, medium, and high socioeconomic status student classrooms among sites was attempted and is reflected in the final project sample.

Nomination Process. The nomination process consisted of contacting various personnel in the teacher education community to inform them of the project and to seek their advice regarding programs and personnel that might best meet project criteria. Both subjective and objective information was sought.

Teacher education program. Selection of the teacher education program in Utah and Nevada was straightforward as there is only one university within each state and area, respectively. However, in California the large number of teacher education programs required an orderly selection procedure. Therefore, only the California site reflects a nominated program. It should be noted that this does not reflect on the nature of the other two sites in any way.

Approximately 20 northern California teacher education institutions were contacted for recommendations of quality teacher education programs and to gather objective program information. This information appears in Table 1 as program characteristics and client school district aspects.

Teacher education personnel. The three Regional Research Fellows, one at each site, were selected by the nomination interview procedure. In general, the procedure involved contacting over 20 teacher education program administrations for recommendations of key faculty members to approach regarding collaboration. Each recommended teacher educator was interviewed and the nature of their in-

dividual interests, past experiences, and willingness to collaborate were considered.

In sum, site selection was based on providing variety in teacher education program characteristics and school district characteristics. Additionally, a prespecified site selection factor emanating from the original proposal was adhered to and a nomination interview procedure was used. Both subjective and objective criteria were involved in the final selection.

The teacher education faculty members from each of the three sites, hold key positions in their respective institutions and have been associated with their institutions for a number of years.

Collaborative Interactive R&D Process

The application of research on effective instruction is occurring through a process of collaborative inquiry, using the Interactive Research and Development on Teaching (IR&DT) model developed at FWLERD (Ward & Tikunoff, 1982). The central theme of collaborative inquiry provides knowledge about and experience in solving problems in concrete and directly relevant professional situations. Three essential characteristics of collaborative research are: (a) the establishment of parity, or mutual respect, among collaborators, (b) the maintenance of reciprocal relationships among team members representing different professional roles, and (c) the establishment of a common language (Mergendoller, 1981). The overall goal is for the individuals in the collaborative team to work together in investigating educational problems that are of interest to all the team members.

Study participants are involved in collaborative one at two major levels: the Regional Teacher Education Team (RTET) level and the Teacher Education Academies (TEA) level. Experiences at these two levels include two years of field activities. Engaging teacher education personnel in a RTET for collaborative research purposes together with engaging education personnel themselves in the academies provides a forum of multiple perspectives. It is expected that the academy network system will facilitate communication and result in long term collaboration for effective instruction and school improvement.

Phase I

This section briefly describes the elements of Phase I of the study which serves to inform the configuration of Phase II. A schematic diagram of the stages for Phase I appears as Figure 1. (p. 15).

In the first of two phases, the study selected and convened a Regional Teacher Education Team (RTET), consisting of three experienced teacher educators.

The regional teacher education team (RTET) met four times. The purpose was to provide personal growth, professional development and support of goals and effort in tne collaborative mode. It was expected that the team meeting experience would enable individual members to more easily model the collaborative process when implementing study tasks with their own teacher education programs.

During the first meeting the major focus was to establish the RTET, increasing familiarity with the scope of the study, and examining the consistent patterns of research findings about effective

instruction and successful elementary schools for employing those findings in analyses of classroom situations. The examination of research findings included reviewing, discussing, elaborating, and interpreting major aspects of instructional effectiveness research at the elementary elementary school level for development of their own research/intervention designs. Ensuing meetings continued in this vein as well as responding to the evolving needs and interests of the Regional Research Fellows.

In order to analyze classroom situations RTET members undertook several structured activities to practice observation strategies for and application of the instructional effectiveness research findings to their instruction of preservice teachers. This included a variety of observation instruments and techniques to collect information on and analyze both videotape and public school classrooms of effective elementary school instructors. The structured activities enabled each member of the team to later generate a document synthesizing these experiences and tailor them to their own teacher education program for application.

The Regional Teacher Education Team members each developed a comprehensive description (Driscoll & Gee, 1983; Johns & Gee, 1983; Ponzio & Gee, 1983) of their teacher education program. These three Situational Analyses serve as a baseline data collection to obtain a broad view of the content and process of teacher education programs at each site. The situational analysis include, but are not limited to, descriptions of:

- o entering student teacher characteristics such as previous experiences, education, and perspectives of teaching;

- o institutional rationale for the teacher education program;
- o certification requirements for teacher education at both the institutional level and the state level;
- o procedures for inducting student teachers; and
- o school district criteria for hiring.

Evolving from the Situational Analyses each Regional Research Fellow developed plans for using effective instruction research findings at their individual sites. Each of the three plans incorporated many of the elements that describe each site at the university, school district, and community levels in terms of the teacher education program, characteristics of preservice teachers, state certification requirements, and the recruitment and hiring criteria for local education work forces.

Generally the three research/intervention plans incorporate the application of effective instruction research findings into the student teaching clinical experience. More specifically, the concepts of active teaching behaviors (Good, Grouws, & Ebmeier, 1983) and academic learning time (Fisher, et. al., 1980) are introduced using a variety of strategies. Each of the three teacher education program research/intervention designs are described in detail (See Driscoll, 1983; Johns, 1983; Ponzio, 1983).

Comprehensive plans to form and establish a TEA at each site are also being developed by each Regional Research Fellow. Specific membership and programs of activity will be determined in the collaborative mode. The plan will be a guide based on needs, goals, and objectives including suggested activities and resources. Each Regional Research Fellow's understanding of the procedure, the func-

tions of each element of the plan, and applicability will be appropriately adapted for use at each of the sites. (Figure 1 illustrates the developmental stages of Phase I of the RUETE project.)

Finally, periodic onsite training and technical assistance is provided by FWLERD staff. This includes, but is not limited to, data collection training, document planning and development, as well as implementation of research/intervention designs.

Phase II

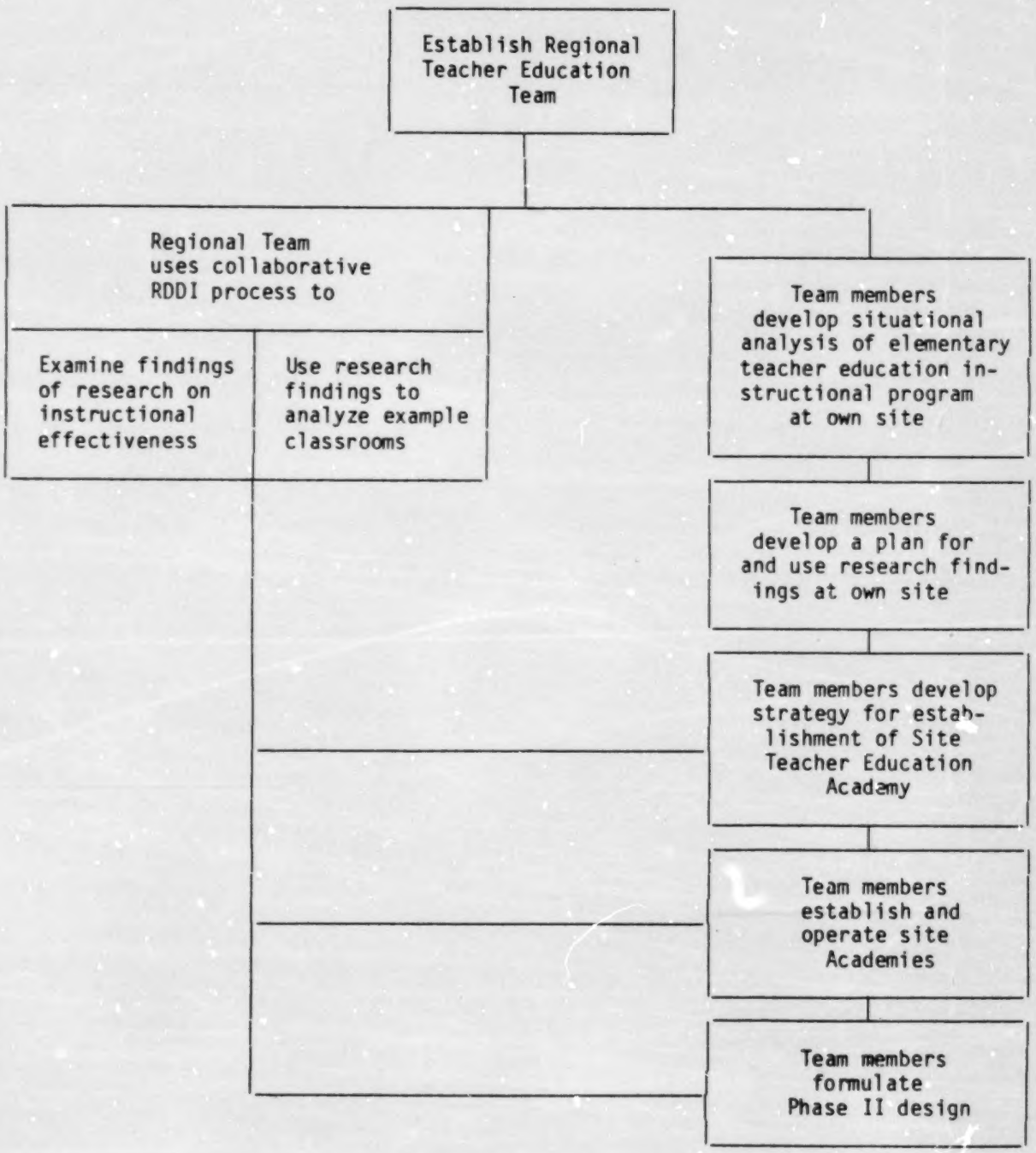
The second phase builds on, extends, and consolidates the establishment of the Regional Teacher Education Team, implementation of the research/intervention plans, and the teacher education academies. This work will evolve from and be informed by the work in Phase I.

Monitoring and support of the Phase I RTET will encompass the activities and operation of establishing the teacher education academies. FWLERD support includes assistance in planning and developing resources, providing presentations, training, and analysis assistance. The timing and actual design of the monitoring and support activities will depend upon considerations at each site and upon the structure of the particular TEA being instituted.

The major conceptualization constitutes using an interactive research development, dissemination, and implementation procedure which engages both teacher educators and local education personnel responsible for hiring and inducting new teachers to tailor local teacher education programs to match projected regional or local school needs. This second phase will give the Phase I RTET an opportunity to fully develop and establish the ensuing academies.

Figure 1

Schematic Diagram for Research Utilization in
Elementary Teacher Education:
Phase I


Establish Regional Teacher Education Team
Regional Team uses collaborative RDDI process to
Examine findings of research on instructional effectiveness
Use research findings to analyze example classrooms
Team members develop situational analysis of elementary teacher education instructional program at own site
Team members develop a plan for and use research findings at own site
Team members develop strategy for establishment of Site Teacher Education Academy
Team members establish and operate site Academies
Team members formulate Phase II design

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Summary

The Research Utilization in Elementary Teacher Education (RUETE) research project organized a Regional Teacher Education Team (RTET) to redesign, implement, and evaluate elementary teacher training that incorporates the findings of effective instruction and effective school improvement research. RUETE is also developing a teacher education academy (TEA) at each of three sites. FWLERD research on teaching in elementary schools regarding effective classroom management, instruction, language demands, teacher decision making, student participation in instructional activities, effective use of time by teachers and students, and the effects of various grouping practices is being applied in a collaborative manner with the staffs of preservice elementary teacher education programs at colleges in California, Nevada, and Utah. The TEA will utilize education personnel at each site to outline procedures and processes for analyzing the extent to which teachers with varying years of teaching experience actually use and apply the strategies and knowledge that have been shown to result in better learning outcomes for elementary students. This integration of the application of research on effective instruction with the processes of adult learning is expected to result in long term regional collaboration for effective instruction and school improvement.